Pranjal Sahu

Contact Information

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https://pranjalsahu.github.io/home/ github.com/PranjalSahu
stackoverflow.com/users/907770

Interests

Machine Learning, Computer Vision, Medical Imaging.

Education

Ph.D. in Computer Science, Stony Brook University, 2021

Dissertation Topic: Synthetic Data for Deep Learning in Medical Imaging
Advisor: Dr. H. Qin

Indian Institute of Technology Kharagpur, GPA: 8.35

B.Tech.(Hons) in Computer Science, 2013

Skills

Python, C++, C, Matlab, Pytorch, Keras, Tensorflow, OpenCV, Numpy, Sklearn, Numba, Android SDK, Ruby on Rails, PostgreSQL, Spark, HBase, Git

Internships

Segmentation of Lung CT in presence of severe pathologies. Improved recall of Tumor voxels from 0.56 to 0.87 and published the work in J-BHI journal.
Siemens Healthineers, Malvern, PA. (2020)

Large lung nodule detection in Siemens Syngo CT CAD.
Siemens Healthineers, Malvern, PA. (2019)

Autonomous Infrastructure for Transition Prediction.
Brookhaven National Laboratory, Computational Science Initiative (2017)

Work Experience

Ruby on Rails backend developer, handled consumer facing iOS and Android APIs.
Oyo Rooms, Software Developer, Gurgaon, India. (2015-2016)

Used Spark and HBase to create APIs for a real time mobile analytics dashboard.
HT Media, Data Scientist, Gurgaon, India. (2015-2015)

Handled performance related issues in Samsung Android smartphones.
Samsung Research Institute, Software Engineer, Noida, India. (2013-2015)

Selected Publications

P. Sahu, Y. Zhao, P. Bhatia, L. Bogoni, A. Jerebko, H. Qin. *Structure Correction for Robust Volume Segmentation in Presence of Tumors,* IEEE Journal of Biomedical and Health Informatics, J-BHI, 2020

P. Sahu, D. Yu, M. Dasari, F. Hou and H. Qin. *A Lightweight Multi-section CNN for Lung Nodule Classification and Malignancy Estimation,* IEEE Journal of Biomedical and Health Informatics, J-BHI, 2018.

P. Sahu, D. Yu and H. Qin. *Apply lightweight deep learning on internet of things for low-cost and easy-to-access skin cancer detection,*, SPIE, 2018 **(Best Demo Award)**.

M. Dasari, A. Bhattacharya, S. Vargas, **P. Sahu**, A. Balasubramanian, S. Das. *Streaming 360 degree Videos using Super-resolution*, IEEE INFOCOM 2020.

Honors and Awards

2018	Best Demo Award in SPIE Medical Imaging Conference
2016	Computer Science Chairman Fellowship, Stony Brook University
2005	Represented home state in National Children Science Congress

Invited Talk

Deep Learning applications in Medical Imaging, at Bell labs, Murray Hill (2019).

Other Publications

P. Sahu, H. Huang, W. Zhao, and H. Qin. *Distilling Classical Algorithm in CNN for a Human-in-the-loop Reconstruction Framework,* Under Review, MICCAI 2021.

C. Zhan, M. Ghaderibaneh, **P. Sahu**, H. Gupta. *DeepMTL: Deep Learning Based Multiple Transmitter Localization*, WOWMOM 2021.

P. Sahu, H. Huang, W. Zhao, and H. Qin. *Using virtual digital breast tomosynthesis for de-noising of low-dose projection images,* International Symopsium on Biomedical Imaging, ISBI 2019.

X. Duan, **P. Sahu**, H. Huang, W. Zhao. *Scatter correction with deep learning approach for contrast enhanced digital breast tomosynthesis (CEDBT) in both cranio-caudal (CC) view and mediolateral oblique (MLO) view*, IWBI 2020 **(Oral)**.

P. Sahu, D. Yu and K. Yager, M. Dasari and H. Qin. *In-Operando Tracking and Prediction of Transition in Material System using LSTM,* International Workshop on Autonomous Infrastructure for Science, HPDC, 2018.

N. Song, D. Craciun et al. *Protein Shape Retrieval,* Eurographics Workshop on 3D Object Retrieval, 3DOR 2017.

Conference Talks

Lightweight Deep Learning on Internet of things at SPIE, Houston (2018).

Prediction of Transition in Material System using LSTM at International Workshop on Autonomous Infrastructure for Science, HPDC, Phoenix, (2018).

Service

Reviewer for MICCAI, Journal of Medical Imaging (JMI), Ultrasonics Journal, Medical Physics

Mentored Rutwik Palaskar (MIT ADT University, India) under the mentorship program at Machine Learning for Health (ML4H) workshop at NeurIPS 2020 on Oral Cancer detection work using pathology images.

Graduate Coursework

- ❑ Computer Graphics
- ❑ Computer Vision
- ❑ Convex Optimization
- ❑ Artificial Intelligence
- ❑ Analysis of Algorithms
- ❑ Computer Networks

Selected Academic Projects

Facial Action Unit Detection, Computer Vision, (Tensorflow)
https://github.com/PranjalSahu/DRML

Identification of user actions on Android apps, Computer Networks, (Android)

Point Cloud Triangulation, Computer Graphics, (OpenGL, C++)
https://github.com/PranjalSahu/Point-Cloud-Triangulation

Automatic construction of 3D models from Architectural Line drawings, Computer Graphics (OpenGL, C++).
https://github.com/PranjalSahu/Automatic3DfromSketch

Extra curriculars

- ❑ Silver medal in Inter Hall Thermocol and clay modelling at IIT Kharagpur
- ❑ Member of Azad Hall of Residence Fine Arts team at IIT Kharagpur

References

Available on Request.